

Claims

- 1 1. An oral brush comprising:
2 a body comprising a handle and head;
3 a brush portion connected to the head of said
4 body; and
5 a sustained-release matrix comprising a support
6 resin, a water-soluble substance, and an anti-microbial
7 agent.
 - 1 2. The oral brush of claim 1 wherein said matrix
2 is a template joined to said head.
 - 1 3. The oral brush of claim 1 wherein said resin
2 comprises ethylene vinyl acetate.
 - 1 4. The oral brush of claim 1 wherein said water
2 soluble substance comprises an organic polymer.
 - 1 5. The oral brush of claim 4 wherein said polymer
2 comprises polyethylene oxide.
 - 1 6. The oral brush of claim 1 wherein said anti-
2 microbial agent comprises chlorhexidine.
 - 1 7. The oral brush of claim 1 wherein said resin
2 comprises ethylene vinyl acetate, said water soluble
3 substance comprises polyethylene oxide, and said anti-
4 microbial comprises chlorhexidine.
 - 1 8. The oral brush of claim 2 wherein said template
2 is no greater than 4mm thick.
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1 9. The oral brush of claim 1 wherein said template
2 comprises between 50 percent and 90 percent by weight
3 ethylene vinyl acetate; between 5 percent and 40 percent by
4 weight polyethylene oxide; and between 1 percent and 30
5 percent by weight anti-microbial agent.

1 10. An oral brush comprising:
2 a body including a head and a handle;
3 a brush portion attached to said head; and
4 a sustained-release matrix comprising a polymer and
5 an anti-microbial agent.

1 11. The oral brush of claim 10 wherein said
2 sustained-release matrix is attached to said head.

1 12. The oral brush of claim 10 wherein said anti-
2 microbial agent comprises chlorhexidine.

1 13. The oral brush of claim 10 wherein said polymer
2 comprises a water-soluble polymer.

1 14. The oral brush of claim 13 wherein said water-
2 soluble polymer comprises polyethylene oxide.

1 15. The oral brush of claim 10 wherein said polymer
2 comprises a support resin.

1 16. The oral brush of claim 10 wherein said matrix
2 comprises

3 a. a first layer including a water-soluble polymer
4 and an anti-microbial agent, and

5 b. a second layer joined with said first layer and
6 comprising a support resin.

1 17. The oral brush of claim 16 wherein said water-
2 soluble polymer is polyethylene oxide.

1 18. The oral brush of claim 15 wherein said second
2 layer further comprises a support resin.

1 19. The oral bush of claim 18 wherein said support
2 resin is ethylene vinyl acetate.

1 20. The oral brush of claim 10 wherein said matrix
2 comprises

3 a. a first layer comprises said polymer and said
4 anti-microbial agent, wherein said polymer is a support
5 resin, and

6 b. a second layer joined with said first layer and
7 comprising a support resin.

1 21. The oral brush of claim 20 wherein said support
2 resin comprises ethylene vinyl acetate.

1 22. A sustained-release matrix comprising:
2 a resin comprising ethylene vinyl acetate;
3 a water-soluble polymer comprising polyethylene
4 oxide; and
5 an anti-microbial agent.

1 23. The matrix of claim 22 comprising between 50
2 percent and 90 percent by weight ethylene vinyl acetate;
3 between 5 percent and 30 percent by weight polyethylene
4 oxide; and between 3 percent and 30 percent by weight anti-
5 microbial agent.

1 24. The matrix of claim 22 wherein said anti-
2 microbial agent comprises chlorhexidine.

1 25. A sustained-release matrix comprising a first
2 layer comprising a polymer and an anti-microbial agent, and
3 a second layer joined to the first and comprising a support
4 resin.

1 26. The matrix of claim 25 wherein said polymer in
2 said first layer comprises a support resin.

1 27. The matrix of claim 25 wherein said polymer in
2 first layer comprises a water soluble polymer.

1 28. A method of releasing an anti-microbial agent
2 from an oral brush, comprising
3 providing an oral brush including a body with a
4 handle and a head, a brush portion attached to said head,
5 and a sustained-release matrix comprising a water insoluble
6 resin, a water-soluble polymer, and an anti-microbial agent;
7 and
8 contacting the portion of said brush including said
9 matrix with water, causing said water-soluble polymer in
10 said matrix to dissolve, thereby releasing said anti-
11 microbial agent into said water.

1 29. The method of claim 28 further comprising
2 inserting said portion of the brush including the matrix
3 into the mouth of an animal, the saliva of the animal
4 including water that causes said water-soluble polymer to
5 dissolve thereby releasing said anti-microbial agent into
6 said mouth.

1 30. The method of claim 28 wherein said anti-
2 microbial agent is chlorhexidine.

1 31. The method of claim 28 wherein said resin
2 comprises ethylene vinyl acetate.

1 32. The method of claim 28 wherein said water-
2 soluble polymer comprises polyethylene oxide.

1 33. A method of releasing an anti-microbial agent
2 into a mouth of an animal, comprising
3 providing a matrix including a resin, a water-
4 soluble substance, and an anti-microbial agent; and
5 inserting said matrix into a mouth of an animal,
6 said matrix releasing said anti-microbial agent into said
7 mouth.

1 34. The method of claim 33 wherein said resin
2 comprises ethylene vinyl acetate.

1 35. The method of claim 34 wherein said water-
2 soluble substance comprises polyethylene oxide.

1 36. A wear-indicator oral brush, comprising
2 a body comprising a handle and head;
3 a brush portion connected to the head of said body;
4 and
5 a matrix that is attached to said head of said body,
6 said matrix comprising a colorant and a water-leachable
7 substance that leaches into water when the oral brush is
8 used to cause said matrix to change color after repeated
9 uses.

1 37. The oral brush of claim 36 wh rein said water-
2 leachable substance comprises a water-soluble polymer.

1 38. The oral brush of claim 37 wherein said water-
2 soluble polymer is selected from the group consisting of
3 polyethylene oxide, polyethylene glycol, and polyvinyl
4 alcohol.

1 39. The oral brush of claim 36 wherein said matrix
2 further comprises a water-insoluble support resin.

1 40. The oral brush of claim 39 wherein said support
2 resin comprises ethylene vinyl acetate.

1 41. The oral brush of claim 39 wherein said water-
2 leachable substance comprises said colorant.

1 42. The oral brush of claim 36 wherein said matrix
2 comprises
3 a first layer comprising said water-soluble
4 substance; and
5 a second layer joined with said first layer and
6 comprising a water-insoluble support resin.

1 43. The oral brush of claim 42 wherein said second
2 layer further comprises said colorant.

1 44. The oral brush of claim 42 wherein said first
2 layer comprises said colorant.
